REMARKS

The Office Action dated October 6, 2006, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1-56 are currently pending in the application, of which claims 1, 8, 15, 19, 23, 30-31, 35, 37, 44-45, 49, 51, 53, and 55 are independent claims. Claim 31 has been amended to more particularly point out and distinctly claim the invention. No new matter has been added. Claims 1-56 are respectfully submitted for consideration.

Claims 1-4, 15-19, 23-26, 31-35, 37-40, 45-49, and 51 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,745,277 of Lee et al. ("Lee"). The Office Action took the position that, although Lee does not disclose all of the features claimed, the undisclosed features would have been obvious in view of Lee's disclosure. Applicant respectfully traverses this rejection.

Claim 1, upon which claims 2-7 depend, is directed to a communication device including an input port for receiving a data packet entering the communication device. The communication device also includes a look-ahead logic module configured to select an address of a first memory bank of an external memory device, wherein the look-ahead logic module is contained within an internal memory control device located within the communication device. The communication device further includes a pointer assignment module, connected to the look-ahead module, is configured to include an independent

link list assigned exclusively to the first memory bank and to assign a pointer to the data packet based upon the first memory bank as determined by the look-ahead logic. The internal memory control device is configured to transfer the data packet to the external memory device. The pointer assignment module is configured to return the pointer to the independent link list and update a free address pool when the pointer has been released after the data packet has been transferred from the external memory device.

Claim 15, upon which claims 16-18 depend, is directed to a communication device including a look-ahead logic module configured to select an address of a first memory bank of a memory device so that no two successive request operations access the same memory bank wherein the look-ahead logic module is contained within an internal memory control device located within the communication device. The communication device also includes a pointer assignment module, connected to the look-ahead module, is configured to assign a pointer to the data packet based upon the first memory bank determined by the look-ahead logic module. The communication device further includes an output port, connected to the communication device, is configured to transfer the data packet to the memory bank of the memory device.

Claim 19, upon which claims 20-22 depend, is directed to a communication device a look-ahead logic module configured to select an address of a first memory bank of a memory device so that no two successive request operations access the same memory bank wherein the look-ahead module is contained within an internal memory control device located within the communication device. The communication device also

includes a link list configured to include multiple independent link lists, wherein each link list is assigned exclusively to a predetermined memory bank located within the communication device. The communication device further includes a pointer assignment module, connected to the look-ahead module, is configured to assign a pointer from one of the independent link lists to the data packet based upon the first memory bank determined by the look-ahead logic module. The communication device additionally includes an output port, connected to the communication device, is configured to transfer the data packet to the memory bank of the memory device.

Claim 23, upon which claims 24-29 depend, is directed to a method of assigning a data packet to a memory bank of an external memory device. The method includes receiving the data packet at an input port of a communication device. The method also includes selecting an address of the memory bank of the external memory bank so that the data packet will not be assigned to a memory bank accessed in a previous request operation. The method further includes providing an independent link list assigned exclusively to the memory bank; assigning a pointer to the data packet based upon the memory bank determined by the look-ahead logic. The method additionally includes transferring the data packet to the external memory device. The method also includes returning the pointer to the independent link list and update a free address pool when the pointer has been released after the data packet has been transferred from the external memory device.

Claim 31, upon which claims 32-34 depend, is directed to a method of assigning a data packet to a memory bank of a memory device. The method includes receiving the data packet at an input port of a communication device. The method also includes selecting an address of the memory bank of the memory device so that no two successive request operations access the same memory bank. The method further includes assigning a pointer to the data packet based upon the memory bank determined by the look-ahead logic module. The method additionally includes transferring the data packet to the memory bank of the memory device.

Claim 35, upon which claim 36 depends, is directed to a method of assigning a data packet to a memory bank of a memory device. The method includes receiving the data packet at an input port of a communication device; selecting an address of the memory bank of the memory device so that no two successive request operations access the same memory bank. The method also includes providing a link list configured to include multiple independent link lists. Each link list is assigned exclusively to a predetermined memory bank. The method further includes assigning a pointer from one of the independent link lists to the data packet based upon the memory bank determined by the look-ahead logic module. The method additionally includes transferring the data packet to the memory bank of the memory device.

Claim 37, upon which claim 38-43 depend, is directed to a communication device including receiving means for receiving the data packet at an input port of a communication device, entering the communication device. The communication device

also includes selecting means for selecting an address of a first memory bank of the external memory bank so that the data packet will not be assigned to a memory bank accessed in a previous request operation. The communication device further includes providing means for providing an independent link list assigned exclusively to the first memory bank. The communication device additionally includes assigning means for assigning a pointer to the data packet based upon the first memory bank determined by the look-ahead logic. The communication device also includes transferring means for transferring the data packet to an external memory device. The communication device further includes returning means for returning the pointer to the independent link list and updating a free address pool when the pointer has been released after the data packet has been transferred from the external memory device.

Claim 45, upon which claims 46-48 depend, is directed to a communication device including receiving means for receiving the data packet at an input port of a communication device. The communication device also includes selecting means for selecting an address of a first memory bank of a memory device so that no two successive request operations access the same memory bank. The communication device further includes assigning means for assigning a pointer to the data packet based upon the first memory bank determined by the look-ahead logic module. The communication device additionally includes transferring means for transferring the data packet to the first memory bank of the memory device.

Claim 49, upon which claim 50 depends, is directed to a communication device including receiving means for receiving the data packet at an input port of a communication device. The communication device also includes selecting means for selecting an address of a first memory bank of a memory device so that no two successive request operations access the same memory bank. The communication device further includes providing means for providing a link list configured to include multipleindependent link lists, wherein each link list is assigned exclusively to a predetermined memory bank. The communication device additionally includes assigning means for assigning a pointer from one of the independent link lists to the data packet based upon the first memory bank determined by the look-ahead logic module. The communication device also includes transferring means for transferring the data packet to the first memory bank of the memory device.

Claim 51, upon which claim 52 depends, is directed to a communication device including an input port for receiving the data packet entering the communication device. The communication device also includes a look-ahead logic module configured to select an address of a first memory bank of a memory device by overriding an address mapping scheme that permits successive data packets to be assigned to the same memory bank, wherein the look-ahead logic module is contained within an internal memory control device located within the communication device. The communication device further includes a pointer assignment module, connected to the look-ahead module, is configured to assign a pointer to the data packet based upon the memory bank determined by the

look-ahead logic module. The communication device additionally includes an output port, connected to the communication device, is configured to transfer the data packet to the memory bank of the memory device.

Applicant respectfully submits that Lee fails to disclose or suggest all of the elements of any of the presently pending claims.

Lee generally relates to an intelligent interleaving scheme for multibank memory. Lee, at column 1, lines 19-35, explains that it aims to solve the problems associated with DRAM activation time overhead associated with large packets being stored in memory. As explained at column 3, lines 6-20, the system controller 100 of Lee's system looks ahead to determine what memory banks are going to be accessed for reading packets out of memory 114 during the same memory cycle. The system controller 100 does this look ahead before selecting two memory banks for writing two packets. Once the look ahead is complete, the system controller 100 intelligently selects two available memory banks that are not the memory banks that are going to be accessed for reading packets out of memory 114 during the same memory cycle. Thus, all memory accesses during the next memory cycle are from different memory banks.

Claim 1 recites "a look-ahead logic module configured to select an address of a first memory bank of an external memory device." Applicant respectfully submits that Lee fails to disclose at least this feature of the claim.

The Office Action cited scheduler 116 of Lee as corresponding to the claimed "a look-ahead logic module configured to select an address of a first memory bank of an external memory device." Applicants respectfully disagree.

Scheduler 116 is an element of system controller 100. However, the only memory addressed by system controller 100 is multibank memory 114. As can be seen from Figure 1, multibank memory 114 is not an "external" memory device, but is – together with the system controller 100 – an internal part of network processing device 90. Accordingly, Applicant respectfully submits that Lee fails to disclose or suggest at least this feature of claim 1.

Claim 1 also recites "a pointer assignment module, connected to the look-ahead module, is configured to include an independent link list assigned exclusively to the first memory bank and to assign a pointer to the data packet based upon the first memory bank as determined by the look-ahead logic." Applicant respectfully submits that Lee also fails to disclose or suggest at least these features.

The Office Action took the position that these features are disclosed by free buffer pool 108. Applicant respectfully disagrees. Free buffer pool 108 is simply a pool of address pointers P1-P4 that identify the next available address in each of memory banks B1-B4, respectively, as described by Lee at column 3, lines 43-45. Free buffer pool 108 therefore is not configured "to include an independent link list assigned exclusively to the first memory bank" nor "to assign a pointer to the data packet based upon the first

memory bank as determined by the look-ahead logic." Accordingly, free buffer pool 108 cannot correspond to the claimed "pointer assignment module."

Claim 1 further recites "the internal memory control device configured to transfer the data packet to the external memory device." As noted above, Lee does not disclose an external memory device. Furthermore, as the Office Action admitted, Lee does not disclose an internal memory control device. Lee's system writes the packet to multibank memory 114, which is internal to network processing device 90.

The Office Action took the position that although Lee does not disclose an internal memory control device, it would have been obvious to include such a device "in order to perform the steps of "write(ing) the receive packets in FIFO 118 into the memory locations identified by the pointers P1-P4." However, the memory locations identified by pointers P1-P4 are in multibank memory 114, which is not an external memory device. Accordingly, even under the Office Action's proposed motivation to modify, the result would not be an internal memory control device "configured to transfer the data packet to the external memory device." Therefore, Applicant respectfully submits that Lee also fails not only to disclose, but also to suggest at least this feature of claim 1.

Claim 1 further recites "the pointer assignment module configured to return the pointer to the independent link list and update a free address pool when the pointer has been released after the data packet has been transferred from the external memory device." As noted above, Lee does not have an external memory device, nor does it have the pointer assignment module as claimed. Furthermore, there is nothing in Lee about

any feature of Lee's system being "configured to return the pointer to the independent link list and update a free address pool when the pointer has been released after the data packet has been transferred from" the memory to which the data packet was written. Indeed, Lee does not address the scenario in which the data packet is transferred from the memory. Accordingly, it is respectfully submitted that Lee also fails to disclose at least this feature of claim 1

In view of the many deficiencies of Lee regarding the claim recitations, it is respectfully requested that the rejection of claim 1 be withdrawn.

Claims 2-4 depend from, and further limit, claim 1. It is, therefore, respectfully submitted that claims 2-4 recite subject matter that is neither disclosed nor suggested by Lee.

The Office Action does not contain a detailed rejection of claims 15-19, 23-26, 31-35, 37-40, 45-49, and 51, but simply refers to the rejections of claims 1-4, calling particular attention to column 3, lines 43 et seq. with regard to claim 19.

Independent claims 15, 19, 23, 31, 35, 37, 45, 49, and 51 each have their own scope. However, as they were not separately rejected, it is respectfully submitted that Lee also fails to disclose or suggest all of the elements of claims 15, 19, 23, 31, 35, 37, 45, 49, and 51, for at least some of the same reasons that Lee fails to disclose or suggest all of the elements of claim 1. It is, therefore, respectfully requested that the rejection of claims 15, 19, 23, 31, 35, 37, 45, 49, and 51 be withdrawn.

Claims 16-18, 24-26, 32-34, 38-40, and 46-48 depend respectively from, and further limit, claims 15, 23, 31, 37, and 45. It is, therefore, respectfully submitted that each of claims 16-18, 24-26, 32-34, 38-40, and 46-48 recites subject matter that is neither disclosed nor suggested by Lee. Thus, it is respectfully requested that the rejection of claims 16-18, 24-26, 32-34, 38-40, and 46-48 be withdrawn.

Claims 8-11, 30, 44, and 52-56 were rejected under 35 U.S.C. 103(a) as being unpatentable over "applicants [sic] admitted prior art (AAPA)" ("the allegedly admitted prior art" or "AAPA") in view of Lee. The Office Action took the position that although the allegedly admitted prior art (AAPA) does not disclose or suggest all of the elements of the claims, its deficiencies are remedied by Lee. Applicant respectfully traverse this rejection, because Applicant has not made any admissions of prior art, and because the rejection is based on improper hindsight reconstruction.

The Office Action's position was that paragraphs [0006] and [0007] of the present application constitute "admitted prior art." Applicants respectfully disagree.

Applicant respectfully submits that discussion of material in the background section of a patent application does not, by itself, constitute the material as "admitted prior art," as the Office Action appears to have suggested. In particular, under the MPEP, in order for material in the background section of the application to constitute an admission of prior art, it must characterize what it is describing as "prior art." *See* MPEP 2129(II). The present background section does not characterize the material that the Office Action relies upon as "prior art." Thus, it is not admitted prior art. *See also, In re*

Seevers, 145 USPQ 694, 697 (CCPA 1965) (Board's decision reversed, because for certain features of the claims the only reference was the applicant's specification, which the Board concluded was not admitted prior art).

As the Supreme Court recognized in *Universal Oil Products Co. v. Globe Oil & Refining Co.*, 61 USPQ 382, 389 (1944), "retrospective simplicity is often a misleading test of invention where it appears that the patentee's conception in fact solved a recognized problem that had baffled the contemporary art." Furthermore, in some cases the unobvious part of Applicant's invention may be recognition of the source of the problem in the art. *See, In re Conover*, 304 F.2d 680, 134 USPQ 238 (CCPA 1962); and *In re Roberts*, 176, USPQ 313, 314 (CCPA 1973). Accordingly, Applicant respectfully submits that the description of a problem in the art in the background section of the application may actually enhance the unobvious status of Applicant's invention, rather than constitute "admitted prior art." Accordingly, it is respectfully submitted that the AAPA is not "admitted prior art" and actually weighs against finding the claimed invention obvious.

Furthermore, even if the material were admitted prior art (not admitted), the Office Action would still have to provide motivation to combine, which cannot be taken from any portion of the application, including the background section. "The showing of a motivation to combine must be clear and particular, and it must be supported by actual evidence. *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)." *Telflex v. Ficosa North Amer. Corp.*, 63 USPQ2d, 1374, 1387 (Fed. Cir. 2002).

Furthermore, ""The factual inquiry whether to combine references must be thorough and searching." [*McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001)] It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'") (quoting C.*R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("'teachings of references can be combined *only* if there is some suggestion or incentive to do so.'") (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). The need for specificity pervades this authority. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no

knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references")." *In re Lee*, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002).

Moreover, As MPEP 2142 states "Knowledge of applicant's disclosure must be put aside in reaching this determination [of obviousness] .... The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." However, in the present rejection, the attempt to meet the high standard set forth by the Federal Circuit regarding motivation to combine is based in large part on Applicant's disclosure, in direct contravention of MPEP 2142.

Thus, Applicant respectfully submits that the combination of the present application and Lee is an improper combination, thus it is respectfully requested that the rejection be withdrawn for this additional or alternative reason.

Claims 12-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Lee and further in view of U.S. Patent No. 6,970,478 of Nishihara ("Nishihara"). Applicant respectfully traverses this rejection.

This rejection is defective for three reasons: AAPA is not "admitted prior art," the combination constitutes impermissible hindsight reconstruction, and Nishihara fails to remedy the deficiencies of Lee. The first two problems with this rejection are discussed at length above with regard to the rejection under the combination of AAPA and Lee.

Nishihara generally relates to a packet transfer method and apparatus and packet communication system. Nishihara, at column 7, lines 18-40, describes three goals that Nishihara aims to achieve. These three goals are to increase the size of a switching unit or transfer time of a crossbar switch section while ensuring the calculation time necessary for switch connection setting even when the number of interfaces increases or the speed of the interfaces increases and while increasing the number of packets transferable on a network, to increase the minimum value and number of packets transferable on a network without degrading the throughput of switch operation, and to increase the number of packets transferable on a network without wasting a free band even when a packet is segmented into device cell units.

It is, therefore, unsurprising that Nishihara does not address the features of claim 8 with regard to which Lee is deficient (for which the Office Action attempted to supply AAPA). Claims 12-14 depend from and further limit claim 8. It is, therefore, respectfully submitted that the combination of Lee and Nishihara fails to disclose or suggest all of the features of 12-14, and it is respectfully requested that the rejection of claims 12-14 be withdrawn.

Claims 5-7, 20-22, 27-29, 36, 41-43, and 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Nishihara. The Office Action took the position that Lee teaches most of the features of the claims, and cited Nishihara to remedy Lee's deficiencies. Applicant respectfully traverses this rejection.

Claims 5-7, 20-22, 27-29, 36, 41-43, and 50 depend respectively from, and further limit, claims 1, 19, 23, 35, 37, and 49. The deficiencies of Lee with regard to claims 1, 19, 23, 35, 37, and 49 are discussed above. Nishihara is also discussed above. In view of Nishihara's goals, as described above, it is unsurprising that Nishihara fails to disclose or suggest the above-identified deficiencies of Lee with regard to claims 1, 19, 23, 35, 37, and 49. It is, therefore, respectfully submitted that the combination of Lee and Nishihara fails to disclose or suggest all of the features of claims 1, 19, 23, 35, 37, and 49, and it is respectfully requested that the rejection of claims 1, 19, 23, 35, 37, and 49 be withdrawn.

For the reasons explained above, it is respectfully submitted that each of claims 1-56 recites subject matter that is neither disclosed nor suggested in the prior art. It is,

therefore, respectfully requested that all of claims 1-56 be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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